# INFORMATION CIRCULARS "T"

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# INFORMATION CIRCULARS "T"

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|---|---|
| T/Special | Canadair C-4 and C-4-1 - Mandatory Modifications, Inspections, and Replacements. |
| T/Special | Cessna Aircraft 120 and 140 Upper Rudder Hinge. |
| T/1/50 | Aircraft Fabric. |
| T/Special | De Havilland "Beaver" DHC-2 Mandatory Modifications, Inspections and Replacements. |
| T/Special (1st revision) | De Havilland "Beaver" DHC-2 Mandatory Modifications, Inspections and Replacements. |
| T/Special | Anson V Aircraft - Reinforcement of Fin Post (for Ski Operation). |
| T/Special | Canadair DC4M2 - Mandatory Modifications, Inspections and Replacements. |
| T/Special | deHavilland DHC-1 (Chipmunk) Series - Mandatory Modifications, Inspections and Replacements. |
| T/Special | Anson V Aircraft - Failure of Glue Joint, Skin to Vertical Fin Post. |
| T/2/50 | Renewals of Certificates of Airworthiness. |
| T/Special | DC-3 Aircraft - Fuel Selector. |

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/5/48

OTTAWA, Ontario,
Original, April 30, 1948.
1st Revision, May 30, 1948.

FROM: Director of Air Services

SUBJECT: Aircraft Mandatory Modifications

1. All Airworthiness Directives issued by the Civil Aeronautics Administration for United States type aircraft are to be applicable automatically to such types registered in Canada unless otherwise notified by the Department. Such notification will be issued only in specific cases where it is not desired to have the modification in question incorporated in Canada to United States designed Canadian registered aircraft.

2. Department of Transport notices will be issued by the Chief Aeronautical Engineer in the form of special instructions to cover additional Canadian modifications or inspections, etc., required to aircraft registered in Canada.

3. Such notices will be issued as an Information Circular (T series) in a form that will tie-up with the numbering system of the United States Type Specification for United States designs, or with the Type Approval covering other designs.

4. The DC4M1 and DC4M2 models built by Canadair are to be considered as Canadian designs and, in future, while still being called by the model number, will be referred to as the North Star, M1, or North Star, M2, with a further numeral added denoting variants within these two main groups in accordance with Department of Transport Type Approval Nos. 18 or 20. Consequently, United States - C.A.A. Airworthiness Directives for the DC4 and DC6 types will be applicable for these types only and not to the North Star.

5. The provisions of Information Circular T/3/48 still apply, although in many cases an airworthiness directive will cover the manufacturer's notice.

A. T. Cowley

(A. T. Cowley),
DIRECTOR OF AIR SERVICES.

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FILE NO: 5010-12

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/6/48.
(Cancelling I.C. 0/28/44 and 0/37/44)

OTTAWA, Ontario,
May 25, 1948.

FROM: Director of Air Services

SUBJECT: Limits of Aircraft Life

1. The provisions of Information Circulars 0/28/44 and 0/37/44 have been found to be most difficult to apply to the many and varied types of aircraft operating under different conditions which required different safety standards for aircraft of the same type. Therefore, since it has not been found practical to set a definite limit on the life of any aircraft, these Circulars are cancelled and an aircraft will be allowed to fly so long as it is maintained to its original design standard, regardless of age, but subject to limitation as to the type of operation which may be authorized.

A. T. Cowley

(A. T. Cowley),
DIRECTOR OF AIR SERVICES.

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FILE NO: 5010-3

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/7/48

OTTAWA, Ontario,
June 23rd, 1948.

FROM: Director of Air Services

SUBJECT: Commercial Products for use in Aircraft Construction

1. Certain commercial products, that is, products which are not manufactured to aircraft specifications may be used in aircraft provided the items in question are called for on the approved drawing. Typical examples of such items are as follows:-

Wood screws, carriage bolts and nuts, electric light bulbs, cotter pins, locking wire, adhesive tape, cupboard locks, floor linoleum, leather washers, electric fuses, standard machine screws, sound proofing material, etc., etc.

2. In many cases these so-called commercial products can be purchased from local hardware stores or manufacturers' agents from whom Inspection Release Certificates cannot be obtained due to,

(a) Manufacturers not furnishing Release Certificates as the products are not made to aircraft specifications.

(b) Agents not having approved inspectors or inspection facilities.

3. Products such as these may be selected and accepted by the Air Engineer acting on behalf of the aircraft owner or operator without reference to Inspection Release Certificates provided the items in question are in accordance with the requirements outlined in paragraph 1.

4. Proprietary aircraft accessories should be purchased from manufacturers or agents who have a system of inspection approved by the Department and such items, the design of which has been generally accepted by the industry, should be covered by Inspection Release Certificate AI-9, which may be raised and certified by the approved Inspector acting on behalf of the vendors. Items in this category include such as the following:

.....2

Electrical switches, electrical connectors, ball and roller bearings, cowling, landing lights, tires, safety belts, flame-proof upholstery, adhesives, etc., etc.

5. Due to the difficulty in drawing a definite line of demarcation, Air Engineers are advised to use their discretion when accepting items in these categories.

for (A. T. Cowley),
DIRECTOR OF AIR SERVICES.

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/8/48

OTTAWA, Ontario,
August 3rd, 1948.

FROM: Director of Air Services

SUBJECT: Aero-engines - Periods Between Overhaul

1. In order to establish a uniform procedure governing the allowable periods of time between overhauls of aero-engines, the requirements outlined in the succeeding paragraphs should be observed.

2. Each engine manufacturer recommends a period of time between overhauls, and the Department considers it just as important to adhere to that recommendation as it is to adhere to the manufacturer's advice on the grade of fuel and oil to be used, the operating r.p.m., temperatures, etc. If an operator should desire to increase the recommended running time between overhauls, he should submit all his evidence and data to the Resident AID Inspector. If the latter considers the request reasonable, he will forward his recommendation to Headquarters where the matter will be investigated, and if necessary, the opinion of the engine manufacturer obtained. In every case, final approval of the extension must emanate from Headquarters since the decision may affect other engines of the same type in Canada.

3. Under special conditions, however, Resident AID Inspectors may grant individual concessions (not more than 50 hours at a time to a total of 100 hours) regarding the extension of each period between successive overhauls on receipt of a certification by a "D" category Air Engineer that the engine is in good condition, fuel and oil consumption, performance, temperatures and pressures are normal, and the engine is being operated with reasonable care, good servicing and maintenance. Special conditions are those such as mercy flights and rescue operations; forest spraying and crop dusting which depend so much upon the weather for success; and operations which must be completed before break up, or before freeze up, if the operator is to avoid appreciable hardship.

4. The responsibility of ensuring that owners and operators are familiar with the periods between overhauls for their engines,

is delegated to Districts and Resident AID Inspectors must use their own discretion when granting concessions outlined in para. 3. above.

A. T. Cowley

(A. T. Cowley),
DIRECTOR OF AIR SERVICES.

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FILE NO: 5010-10

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/9/48

OTTAWA, Ontario,
August 3rd, 1948.

FROM: Director of Air Services

SUBJECT: Type Approval of Aircraft Designed in Canada, and Approval of Subsequent Modifications. (Reference Air Regulations 1938 as amended March 12/47, Part 2, Section 1, Paragraph 11(i)).

1. In future when a new aircraft design is approved by the Department, a Type Approval will be issued containing pertinent details with which each aircraft of the type must conform prior to being given a Certificate of Airworthiness.

2. A Type Approval will be issued by the Chief Aeronautical Engineer when he is satisfied that:-

(a) The design meets all the strength requirements of the airworthiness standards with which it is desired to comply and the designer has submitted proof of such compliance. The applicant shall through the medium of a design organization, or an aeronautical engineering consultant, approved by the Chief Aeronautical Engineer for that purpose, furnish proof that the aircraft complies with the requirements.

(b) The prototype aircraft has been officially test flown and complies with all the performance requirements of the pertinent airworthiness standards.

(c) All equipment, fittings, etc., are in accordance with the pertinent standards.

(d) The flight manual has been prepared by the manufacturer and approved by the Chief Aeronautical Engineer.

(e) The servicing, repair and overhaul instructions have been prepared by the manufacturer and approved by the Chief Aeronautical Engineer.

(f) Production drawings have been examined and approved by the Chief Aeronautical Engineer.

(g) All other tests, calculations, etc., have been approved by the Chief Aeronautical Engineer.

..... 2

3. A Canadian designer may choose for his airworthiness requirements the regulations or standards in force at the time of application for Type Approval and issued by either the United States Civil Aeronautics Administration, or the British Air Registration Board, or the International Civil Aviation Organization, together with any special Canadian requirements which have been promulgated.

It is emphasized, however, that the designer must consistently adhere to one choice of airworthiness requirements, plus special Canadian additions, when submitting proof of compliance with strength and performance requirements.

Designers are also warned that International Civil Aviation Organization standards will be enforced at the latest:-

(a) On January 1st, 1952 for all individual aeroplanes newly introduced into international navigation and carrying persons for hire or reward.

(b) On January 1st, 1955 for all aeroplanes engaged in international navigation and carrying persons for hire and reward.

Consequently, it is advisable for any designer to consult with the Chief Aeronautical Engineer before deciding upon a choice of airworthiness requirements, especially if a Type Approval for Export is desired.

4. No official flight tests will be performed by the Department unless:-

(a) Single copies of all drawings necessary to substantiate airworthiness and duplicate copies of complete drawing schedules (indicating latest drawing issues) have been submitted to the Chief Aeronautical Engineer for approval.

(b) All calculations and reports on tests necessary to substantiate airworthiness have been submitted to the Chief Aeronautical Engineer together with any Design Certificate which may be required.

(c) An inspection Release Certificate properly certified and covering the construction of the prototype aircraft has been submitted to the Chief Aeronautical Engineer.

(d) A copy of the applicant's flight trials has been submitted to the Departmental Test Pilot.

5. The Design Certificate mentioned in Para. 4(b) should be in the following form, or its equivalent, and signed by a Senior Official of the manufacturer whose qualifications and experience have been accepted for that purpose by the Chief Aeronautical Engineer.

..... 3

Aircraft Type_____ Category_____
Registration Marks_____ Landing Gear_____
Constructor's Serial No._____
Engine(s) Type_____

I certify that:-

(a) With the exceptions stated in (d) below, the design of the above aircraft complies with the airworthiness requirements published by on (date) and such other requirements as have been notified by the Chief Aeronautical Engineer, Department of Transport, in writing as applying to this aircraft.

(b) The calculations made during the course of the design have been checked in a manner approved by the Chief Aeronautical Engineer, Department of Transport, and every reasonable precaution has been taken to ensure arithmetical accuracy.

(c) The design data, calculations, reports on tests and drawings furnished by me to the Chief Aeronautical Engineer, Department of Transport, are a true and accurate record of the design of this aircraft.

(d) Exceptions:-

_____
_____
_____
_____

(Signed)_____
(Title)_____
(Firm)_____
(Date)_____

6. The Inspection Release Certificate mentioned in Para. 3(c) should be in the following form, or its equivalent:-

Aircraft Type_____ Category_____
Registration Marks_____ Landing Gear_____
Constructor's Serial No._____
Engine(s) Type_____

I certify that the above aircraft, being the first of its type, has been constructed in essential conformity with the drawings approved by the Chief Engineer (Designer) of this Company in accordance with the attached schedule and submitted to the Chief Aeronautical Engineer, Department of Transport, for final approval; that the materials entering into its construction conform to approved specifications; that all workmanship is sound and in accordance with accepted aircraft practice; that the complete aircraft has been inspected by me in accordance with accepted

standards for aircraft inspection procedure, and that the aircraft is, in my opinion, airworthy for flight.

(Signed) _____
Chief Inspector

(Firm) _____ _____
(Concurred by) _____
Resident Inspector, AID,
Department of Transport.

7. Modifications subsequent to Type Approval

After the prototype aircraft has been approved and the prototype drawing list sealed, the design will normally undergo further development with the introduction of modifications to improve the design and facilitate production. The reference to a modification to an aircraft shall be construed as including a modification to its engines, components, accessories, instruments, equipment and apparatus and their installation.

8. All modifications will be classified by the manufacturer as either major or minor modifications:-

(a) A major modification is defined as being any alteration which affects the safety of an aircraft. For example, an alteration which appreciably affects the strength of the primary structure, or the flying qualities of an aircraft, or the functioning of a part or installation affected by airworthiness requirements, will be classified as a major modification. The introduction or relocation of equipment, if governed by airworthiness requirements, will also be a major modification.

(b) An alteration not affecting the safety of an aircraft is a minor modification.

(c) Wherever there is any doubt as to the classification of a modification it should be regarded as a major modification or referred to the Department for decision.

(d) When, in the opinion of the Department, a modification radically affects the design of an aircraft, an application for a Certificate of Airworthiness for a prototype aircraft may be required.

9. A major modification will be assigned a modification number by the manufacturer and will be indexed on a Modification Sheet which will contain the following information:-

Modification Number
Date of Issue
Aircraft Type or Model

Title of Modification (Indicate briefly nature of alteration)
Reason for change
Embodiment (State first serial number in which change is embodied at factory)
List of New Drawings Introduced
List of New Drawings Replaced

There would be no objection to the inclusion of a number of related changes on one Modification Sheet under one modification number.

10. Major modifications must receive the approval of the Department. For this purpose, two copies of each Modification Sheet and single copies of all technical data necessary to substantiate the airworthiness of the modification must be submitted to the Chief Aeronautical Engineer. On approval, a sealed copy of the Modification Sheet will be returned to the applicant.

11. A member of the applicant's design staff may be authorized by the Chief Aeronautical Engineer of the Department to approve minor modifications without further reference to the Department.

12. If modifications become too numerous, or, if a new model number denoting a major change is introduced, the Department may require a completely revised drawing schedule which will consolidate all current modifications, and the title page will record the numbers of the major modifications which have been so consolidated.

13. For each production aircraft constructed to an approved type design, the Resident Inspector, AID, must ensure that the Flight Manual contains an accurate Weight and Balance Report for the particular aircraft concerned, and that this Flight Manual together with other Manuals and necessary documents (e.g., copy of the Type Approval) are supplied with the aircraft. A statement to this effect must be included in the Inspection Release Certificate AI-1, Issue 2, a sample of which is attached.

A. T. Cowley

(A. T. Cowley),
DIRECTOR OF AIR SERVICES.

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# AIRCRAFT INSPECTION RELEASE CERTIFICATE

(For Production Aircraft having Canadian Type Approval)

Registration _____

Aircraft Type _____ Landplane / Seaplane / Skiplane  Model _____

Manufacturer _____  Serial No. _____

Type Approval No. _____

Certificate of Airworthiness required for:
(Delete categories and subdivisions - not required)

CATEGORY

| | |
|---|---|
| Normal | ( a - Public transport passenger<br>( b - " " Mails<br>( c - " " Goods |
| Semi-Acrobatic | ( d - Private<br>( e - Aerial work |
| Acrobatic | ( f - Demonstration<br>( g - Racing or record |
| Special | ( h - Research or experimental |

## RECORD OF APPROVED MAJOR MODIFICATIONS EMBODIED SUBSEQUENT TO APPROVAL OF TYPE AIRCRAFT

| DRAWING AND ISSUE NO. | DESCRIPTION |
|---|---|
| | |

CERTIFICATES OF CHIEF FACTORY INSPECTOR

I hereby certify that the aircraft described herein has been constructed under my supervisory inspection, that it conforms to the drawings and specifications of the approved Type Aircraft, that the materials entering into its construction conform to those specifications, that all workmanship is sound and in accordance with accepted aircraft practice.

Signed _____ Date _____
Chief Inspector

_____ Co. Ltd.

(The following certificate to be executed on the day of test flight)

I hereby certify that the completely assembled aircraft described herein has been inspected by me, that the complete control system has also been inspected by another licensed Air Engineer and that the aircraft is airworthy and an entry in the log book to this effect has been made.

Signed _____ Air Engineer _____ Chief Inspector

_____ Date

CERTIFICATE OF FACTORY TEST PILOT

I hereby certify that I have flown the aircraft described herein and that its performance, flying qualities and functioning of controls, power plant, and landing gear are up to the standard of the Type Aircraft.

Signed _____ Date _____
Test Pilot

RECOMMENDATION OF RESIDENT INSPECTOR, A.I.D., CIVIL AVIATION

The aircraft described herein has been properly inspected and tested, and an accurate Weight and Balance Report is contained in the Flight Manual. This Manual and other necessary documents are supplied with the aircraft. The issue of a Certificate of Airworthiness in Category _____ Subdivision _____ is recommended.

Signed _____
Resident Inspector, A.I.D.
Civil Aviation

CONCURRENCE OF DISTRICT INSPECTOR, CIVIL AVIATION

I concur in the recommendation for issue of a Certificate of Airworthiness for one year as from (date)

Signed _____
District Inspector, Civil Aviation.

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/19/48.
(To be read in conjunction with T/22/38)

OTTAWA, Ontario,
August 3rd, 1948.

FROM: Director of Air Services

SUBJECT: Aircraft Inspection Organizations

1. Since the issuance of Information Circular T/22/38, several instances have occurred from which it is deduced by the Department that various interpretations exist as to the requirements necessary for the granting of approvals of inspection staffs at aircraft factories, repair and overhaul shops and supply houses. In order to clarify the situation and to ensure consistency in the inspection organizations throughout the country, the conditions or requirements outlined in the succeeding paragraphs must be observed, in addition to those contained in Information Circular T/22/38.

2. The Chief Inspector shall be directly responsible to the directors of the firm for the organization and control of the inspection staff which shall be provided with adequate facilities and equipment to enable them to perform their duties effectively. A quarantine store shall be provided for materials and parts until such time as they are proved to conform to specification, and a bonded store shall be provided for materials and parts which have been proved to conform to specification.

3. Inspection stamps approved by the Chief Aeronautical Engineer shall be issued to individual inspectors and shall not be transferred. Records shall be kept of processes and tests to which materials and parts have been subjected, and an approved certificate in respect of materials and parts released shall be issued to the consignee. A copy of each approved certificate issued shall be retained by the Chief Inspector for record purposes.

4. The inspection organization shall be maintained at the standard originally approved. Consequently, changes in the constitution of the inspection staff shall be notified to the Resident Inspector, A.I.D. and shall be approved by the Chief Aeronautical Engineer, Department of Transport.

..... 2

5. The Chief Aeronautical Engineer or his representative shall at all reasonable times have access to the works for the purpose of satisfying himself that these requirements are being observed.

A. T. Cowley

(A. T. Cowley),
DIRECTOR OF AIR SERVICES.

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FILE NO: 5010-10-21

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
August 6th., 1948.

FROM: Chief Aeronautical Engineer

SUBJECT: Norseman Aircraft - Auxiliary Belly Tank Installation

Under authority of Information Cicular T/5/48 the following Notice is issued:-

NORSEMAN
7/1

1. Some Norseman aircraft are fitted with auxiliary belly fuel tanks which are filled from the inside of the cabin. Service Bulletin No. CC-E2-46/a, issued by the Aviation Division of Canadian Car and Foundry Company, Limited, outlines the changes necessary to modify these tanks for filling from the outside of the aircraft.

2. This modification is mandatory for all Norseman so affected and all such fuel tanks must be modified in accordance with this bulletin as soon as possible, but not later than 31st October, 1948.

(H. S. Rees),
Chief Aeronautical Engineer.

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File: 5012-P2
5012-F1

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/11/48

Ottawa, Ontario,
September 8, 1948.

FROM: Director of Air Services

SUBJECT: Emergency Flare Installation

1. In some types of aircraft the emergency flare pistol is stowed on a bracket in the cabin and must be removed from this bracket, loaded and discharged out of a window.

2. To eliminate the hazard which exists through the free use of a pistol inside the aircraft, a chute or tube through which the pistol is discharged must be installed. In addition, the pistol must be attached to the chute so that it can be loaded and fired without necessitating its removal from the chute. The chute must be positioned so that it is handy to the pilot and at the same time has adequate clearance for the emission of the flare.

3. This modification is effective immediately and pending its incorporation, the carriage of emergency flare pistols is prohibited.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR T/12/48

Ottawa, Ontario,
Original, September 7, 1948.
1st Revision, April 2, 1949.

FROM: Director of Air Services

SUBJECT: Airworthiness Requirements for Gliders

1. With reference to Paragraph 4 of Information Circular O/41/46, the definite standards of airworthiness, as quoted therein, are now defined as being those contained in Section E, Issue 1 of the British Civil Airworthiness Requirements or the United States Civil Aeronautics Authority Civil Air Regulations Proposed Part 05.

2. All future gliders designed and manufactured in Canada, and until further notice, must be shown to comply with the above airworthiness requirements, and subsequent amendments, before Certificates of Registration are issued.

3. For a Type Approval of a glider designed in Canada, and approval of subsequent modifications, the procedures contained in Information Circular T/9/48, dated August 3rd, 1948, must be followed.

4. Gliders designed in and imported from the United States will be accepted by the Department provided they comply with an Approved Type Certificate issued by the C.A.A.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

# INFORMATION CIRCULAR T/12/48

Ottawa, Ontario,
Original, September 7, 1948,
1st Revision, April 2, 1949,
2nd Revision, March 6, 1950.

FROM: Director of Air Services.

SUBJECT: Airworthiness Requirements for Gliders.

1. The standards of airworthiness are defined as being those contained in Section E, Issue 1, of the British Civil Airworthiness Requirements or in the Proposed Part 05 of the United States Civil Aeronautics Authority Civil Air Regulations.

2. Until further notice, gliders designed and manufactured in Canada must be shown to comply with the above airworthiness requirements, and subsequent amendments, before Certificates of Registration are issued.

3. For a Type Approval of a glider designed in Canada, and approval of subsequent modifications, the procedure contained in Information Circular T/9/48, dated August 3rd, 1948, must be followed.

4. Gliders designed in and imported from the United States will be accepted by the Department, provided they comply with an Approved Type Certificate issued by the C.A.A.

5. Gliders must be subjected to normal inspection procedure, except that the signature of an "A" engineer will be accepted for the renewal of the Certificate.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
October 30, 1948.

FROM: Chief Aeronautical Engineer

SUBJECT: Fairchild M62A-3 - Permissible Gross Weight

M62A-3
TC 724/Can.1

1. With reference to Information Circular T/3/47, dated August 18th, 1947, the Department now considers that the Cornell aircraft (M62A-3) should not be certificated for civilian flying unless the following modifications are incorporated:-

(a) Rudder and elevator control springs to be installed in accordance with Fairchild Drawing 62177.

(b) Aircraft to be placarded "Intentional spinning prohibited when flaps are extended".

(c) Centre section front spar to be modified in accordance with RCAF Technical Equipment Order E1/50/54.

2. Consequently, the instructions contained in para. 3 below are issued under authority of Information Circular T/5/48.

3. On and after January 1st, 1949, Information Circular T/3/47 is cancelled and no Cornell aircraft (M62A-3) will be considered eligible for a Canadian Certificate of Airworthiness unless all the modifications quoted in para. 1 above are incorporated.

(H. S. Rees),
Chief Aeronautical Engineer

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DEPARTMENT OF TRANSPORT
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CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/13/48

OTTAWA, Ontario.
Original October 27, 1948.
1st Revision, November 30, 1948
2nd Revision, April 20, 1950.

FROM: Director of Air Services

SUBJECT: Airworthiness Certification of Aircraft, Including Engineering, Inspection and Test Flight Requirements.

1. In order to summarize the various procedures required for the airworthiness certification of aircraft, Information Circular O/30/36 is hereby cancelled and superseded by the requirements contained in the succeeding paragraphs. This Circular outlines the flying tests necessary and should be read in conjunction with the following Information Circulars, which outline the engineering and inspection procedures:

T/22/38 - Aircraft Inspection at Factories, Repair Shops and Supply Houses.

T/5/39 - Modifications and Repairs to Registered Aircraft.

T/5/47 - Surplus Military Aircraft, Aero-Engines, Component Parts, Instruments and Accessories.

T/3/48 - Log Book Entry - Aircraft Overhaul and Inspection for Renewal of Certificate of Airworthiness.

T/9/48 - Type Approval of Aircraft Designed in Canada and Approval of Subsequent Modifications.

2. A test flight at any suitable weight up to maximum gross with a minimum crew on board to ascertain in normal flight that the general performance characteristics are in accordance with the type, the behaviour is satisfactory and all components, accessories, instruments, etc., are functioning correctly, is required for each civil aircraft. In addition, if the aircraft is in the acrobatic category, it must be looped, rolled, dived and spun, (if capable of spinning) during the course of the test.

3. The circumstances under which flight tests are necessary, together with the inspection and engineering data required before the test flight should be undertaken, are as follows:

(a) On each new aircraft of a Canadian Approved Type

(i) Flight test by the Manufacturer's test pilot.

(ii) Inspection documents in accordance with T/22/38 and T/9/48.

(iii) Engineering documents in accordance with T/9/48.

(iv) Test Pilot's certificate in accordance with T/9/48.

(b) On each aircraft of an approved type when imported complete.

(i) Flight test by the importing agent's pilot.

(ii) Inspection certificate by an "A" and "C" Engineer entered in the log book as follows:

"I hereby certify that I have inspected this aircraft and that no damage has been incurred during transit, and that all special Canadian requirements as outlined in the relevant Information Circulars, if applicable, have been complied with."

(iii) Pilot's certificate entered in the log book as follows:

"I hereby certify that I have flown this aircraft and that its performance, flying qualities and functioning of controls, power plant, landing gear, etc., are equivalent to the standards of the type."

(iv) Completion of Form No. 2443 - Certificate of Aircraft Imported Complete

(c) On each aircraft of an approved type when assembled in Canada with imported components.

(i) Flight test by the importing agent's test pilot.

(ii) Inspection and documents in accordance with T/22/38.

(iii) Test pilot's certificate in accordance with T/22/38.

(d) On each aircraft after overhaul, repair or modification in Canada.

(i) Flight test by the pilot employed by the organization responsible for the work.

(ii) Inspection documents in accordance with T/5/39 and T/3/48 (also T/5/47 when applicable).

(iii) Engineering documents in accordance with T/5/39.

(iv) Pilot's certificate as for (b) (iii).

(e) On each aircraft after overhaul in the United States

In order that aircraft of Canadian registration which are flown or shipped to the United States for overhaul, repairs or reconditioning may be again accepted as airworthy in Canada, it is necessary that either the work done or the entire aircraft, when the work has been completed, should be certified by a Civil Aeronautics Inspector, and, also, Form No. 2443 must be completed.

(f) On each aircraft when due for renewal of C. of A.

(i) Flight test by owner or owner's pilot, or if the aircraft is prepared and inspected by an aircraft repair and overhaul organization for C. of A. renewal, then the test to be made by the pilot employed by that organization.

(ii) Inspection documents in accordance with T/3/48.

(iii) Pilot's certificate as for (b) (iii).

(iv) Completion of Form No. 2444 - Application for Renewal of C. of A.

(g) On each war surplus aircraft being exported without a C. of A.

(i) Flight test * by the pilot employed by the organization responsible for preparation for ferry flight.

(ii) Inspection documents in accordance with T/5/47.

(iii) Pilot's certificate in accordance with T/5/47.

* The weight at which tested if less than the maximum gross should be stated on the ferry permit and an entry made thereon to the effect that this weight must not be exceeded during ferrying.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.

5010-10-91

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
November 19, 1948.

FROM: Chief Aeronautical Engineer

SUBJECT: Lockheed Model 18 - Fire Precautions

Under authority of Information Circular T/5/48 the following Notice is issued:

Lockheed 18
TC 723/Can.1

1. Instructions outlined in Information Circular T/5/46 are still in force and, therefore, the requirements of United States Civil Aeronautics Adminstration Airworthiness Directive 48-42-2 is not mandatory for Canadian registered aircraft of the above type when operating in Canada.

2. Airworthiness Directive 48-42-2 is mandatory, however, for any Canadian registered aircraft engaged in international operations.

(H.S. Rees),
Chief Aeronautical Engineer.

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INFORMATION CIRCULAR NO. T/14/48

Ottawa, Ontario.
Original Issued Nov. 22, 1948,
1st. Revision, 12th Sept. 1949.

FROM: Director of Air Services

SUBJECT: Aircraft Weight and Balance Control

1. The control of weight and balance of Canadian Registered aircraft is the responsibility of the aircraft manufacturer and operator. For each new aircraft the manufacturer will furnish complete information with the aircraft, not only regarding its actual weight and balance, but also will include sketches and other data that will assist the operator in checking the balance after alterations. In cases where the permissible C.G. positions vary with gross weight, it is suggested that a note be included in the weight and balance report advising owners to contact the manufacturer when any change is made to the aircraft which would appreciably affect the location of the empty C.G. or location of useful load items.

2. It is emphasized that both the owner and the pilot are responsible for ensuring the aircraft is loaded properly, and in order that this may be achieved the information supplied by the manufacturer should contain the following:-

(a) Weight Limits. The various weight limits should be listed and, where necessary, explained. In the case of a small aircraft only the maximum gross weight would be applicable.

(b) C.G. Limits. The approved operating C.G. range should be quoted.

(c) Empty Weight C.G. Limits (Where Practicable). This information is to enable the operator to comply with the operating C.G. limits under the most adverse loading conditions.

(d) Empty Weight and Empty Weight C.G. Location.

(e) Equipment List. All equipment included in the empty weight and the items should be identified by the item number used in the Type Approval.

(f) Weight Computations. The calculations necessary to determine the empty weight C.G. location and the check of forward and aft C.G. locations where applicable.

(g) Loading Schedule, where necessary.

(h) Loading Schedule instructions.

... 2

As required by Para. 13 of Information Circular T/9/48, the Aircraft Weight and Balance report should be included in the Flight Manual for the particular aircraft concerned.

3. For aircraft registered in Canada and for which a complete weight and balance history is not available, such aircraft must be weighed and the empty C.G. location obtained at the next renewal of the Certificate of Airworthiness.

4. For aircraft registered in Canada and for which a complete weight and balance history is available, such aircraft need not be weighed at the next renewal of the Certificate of Airworthiness unless alterations since the last weighing have resulted in an estimated change of more than 2% from the previously determined empty weight.

5. The procedure adopted by any operator for weighing an aircraft and ensuring proper balance control must, in the first instance, be approved by the Chief Aeronautical Engineer, and no subsequent changes in the procedure should be made without consent of the local Resident Inspector of Aircraft. Scales used for the weighing of any aircraft must be checked for accuracy, and the weighing should be done inside a closed building.

6. The method of determining the location of the empty weight C.G. after weighing is given in Appendix I attached, while Appendix II illustrates a simple example of the estimation of the ballast required to offset the movement of the C.G. due to a modification. These examples should enable the operator to control the balance of his aircraft. It should be noted that in Appendix II the installations of the starter and the fixed ballast increase the empty weight more than 2% and, therefore, the estimated new location of the empty weight C.G. should be checked at the next renewal of the C. of A.

7. Empty Weight is defined as follows:-

Manufacturers bare weight - plus - All items of fixed equipment required by the relevant Aircraft Specification in the applicable category - plus - residual fuel and oil.

Note:- Where removable seats are installed, notation should be made in the weight report showing their disposition at the time of weighing. When required by the applicable category, radio equipment should be included in the empty weight.

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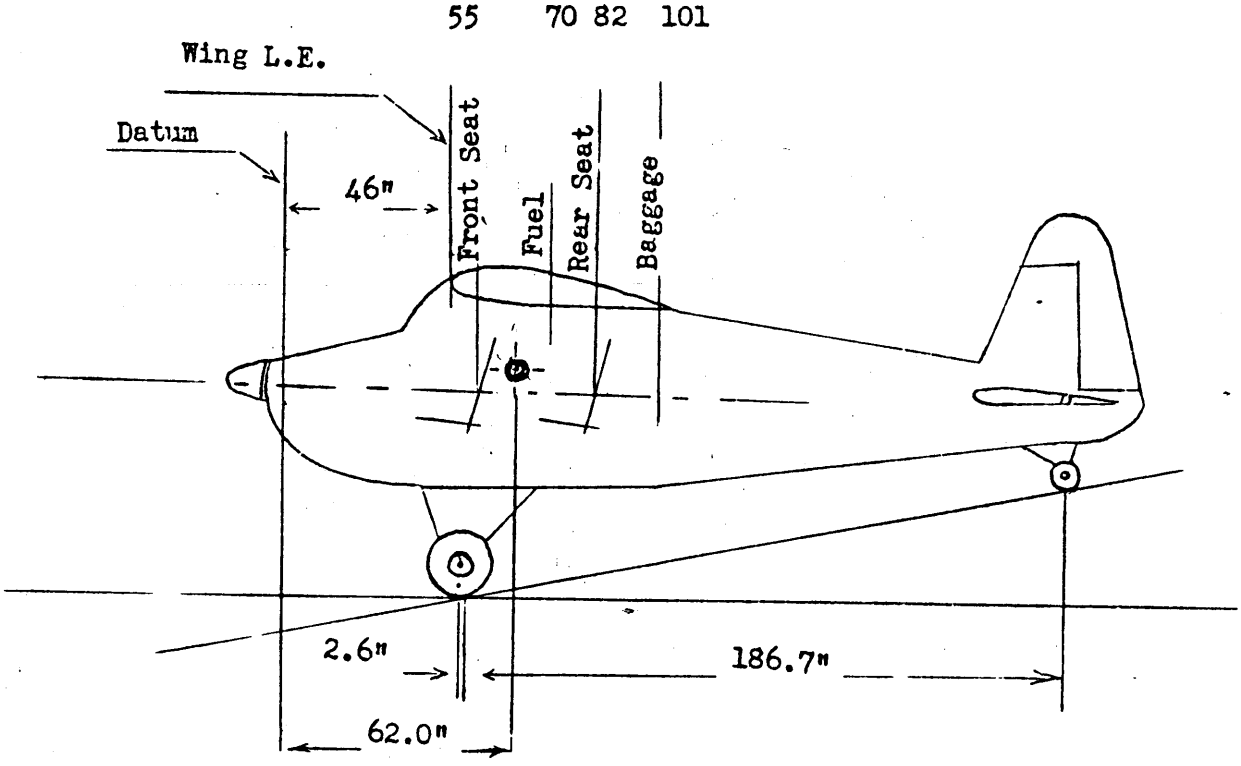
A. T. Cowley

(A.T. Cowley),
Director of Air Services.

APPENDIX I OF T/14/48

Centre of Gravity Determination



## APPENDIX I OF T/14/48

### Determination of Empty Weight Centre of Gravity Location

1. Record weights and dimensions indicated above and compute C.G. as in the following hypothetical example:

| | Scale Reading | Tare | Net |
|---|---|---|---|
| Left Wheel | 354 | -0 | 354 |
| Right Wheel | 342 | -0 | 342 |
| Tail Wheel | 65 | -11 | 54 |
| Actual Empty Weight | | | 750 |

Weight empty includes residual oil (system drained prior to weighing).

Weight empty includes the following equipment:

| | Item | Weight | Arm about Wing L.E. |
|---|---|---|---|
| 101. | Propeller - Wood Fixed Pitch | 10 | -53 |
| 301. | 8.00x4 Wheels (Hayes 841) with tires and Expander Tube Brakes | 20 | + 3 |
| 305. | 6x2.00 Steerable Tail Wheel Scott Aviation Corp. (Model 3000) | 8 | +189.3 |

Distance of empty weight C.G. aft of wheel centerline = Tail scale weight multiplied by distance between tail and main wheels divided by actual weight empty =

$$\frac{54 \times 186.7}{750} = 13.4$$

Distance from Datum to Wheel Centerline:

$$46 + 2.6 = 48.6"$$

Weight empty C.G. is aft of datum: $48.6 + 13.4 = 62.0"$

APPENDIX I OF T/14/48

TRANSPORT - TORONTO
JAN 11 1949
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Most Forward C.G.

| Item | Weight | Arm | Moment |
|---|---|---|---|
| Empty Weight | 750 | 62.0 | 46600 |
| Oil (0.89gal.) | 8 | 12.5 | 100 |
| Fuel (3.48 gal.) | 25 | 70.0 | 1750 |
| Pilot & Chute (Front) | 190 | 55.0 | 10450 |
| Total | 973 | 60.5 | 58900 |

Most forward C.G.=14.5" aft wing L.E.
Approved most forward C.G.=14.5" aft wing L.E.

Most Rearward C.G.

| Item | Weight | Arm | Moment |
|---|---|---|---|
| Empty Weight | 750 | 62.0 | 46600 |
| Oil (0.89 gal.) | 8 | 12.5 | 100 |
| Fuel (14.20 gal.) | 102 | 70.0 | 7140 |
| Pilot & Chute (Rear) | 190 | 82.0 | 15580 |
| Baggage | 20 | 101.0 | 2020 |
| Total | 1070 | 66.7 | 71440 |

Most rearward C.G.= 20.7" aft wing L.E.

Approved most rearward C.G.= 20.7" aft of wing L.E.

APPENDIX I OF T/14/48

Loading Schedule for Maximum Approved Gross Weight.

Maximum Approved Gross Weight 1260 lbs.

| Item | Weight | Arm | Moment |
|---|---|---|---|
| Empty Weight | 750 | 62.0 | 46600 |
| Oil (0.89 gal.) | 8 | 12.5 | 100 |
| Fuel (14.20 gal.) | 102 | 70.0 | 7140 |
| Pilot & Chute (Front) | 190 | 55.0 | 10450 |
| Passenger & Chute (Rear) | 190 | 82.0 | 15580 |
| Baggage | 20 | 101.0 | 2020 |
| Total | 1260 | 64.9 | 81890 |

C.G. position of aircraft at maximum approved gross weight = 18.9" aft wing L.E.

TRANSPORT - TORONTO

## Estimation of Centre of Gravity due to Alterations

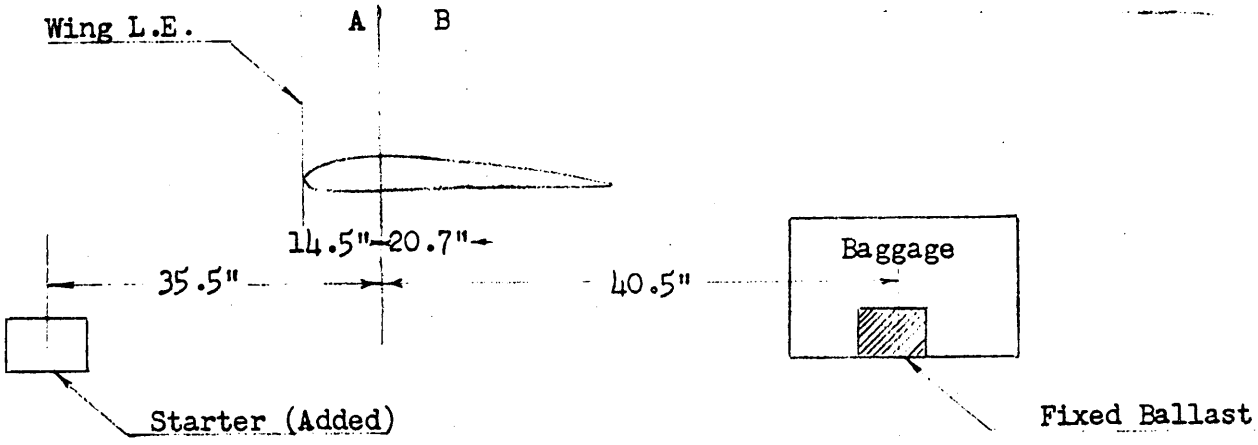


Fig. 2

TO FIND: Fixed ballast required in the baggage compartment to prevent forward movement of aircraft loaded C.G. due to starter installation. Starter weight 15 pounds.

SOLUTION:

(1) Assume aircraft loaded C.G. to fall upon "A" the C.G. limit affected by a change of this type (APP.1).

(2) By addition and subtraction refer all horizontal arms to "A". (See Fig. 2).

(3) Moment about "A" due to addition of starter 15 pounds x -35.5 inches=-532 inch-pounds.

(4) Fixed ballast required in baggage compartment to create equal moment in opposite direction =

$$\frac{532}{40.5} = 13.1 \text{ (or 13 pounds).}$$

(5) Install ballast in compartment and placard as follows: "Fixed ballast 13 pounds - Not to be removed. Baggage capacity 7 pounds."
(Note that baggage capacity has been reduced from 20 lbs.)

(6) Revise empty weight to include 28 pounds added. (Starter 15 pounds and ballast 13 pounds.)

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/5/46

OTTAWA, Ontario,
Original Issued October 28, 1946
1st Revision, November 30, 1948.

FROM: Director of Air Services

SUBJECT: Fire Prevention in Aircraft

1. For all civil aircraft certificated in Canada after November 1st, 1946, the wall and ceiling linings, covering of all upholstery, floors and furnishings in compartments in which smoking is permitted must be made sufficiently flame-resistant to preclude ignition by cigarettes or matches, and ash trays of the self-contained type which are completely removable must be provided. All other compartments must be placarded against smoking.

A. T. Cowley

(A. T. Cowley),
Director of Air Services

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INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
December 8, 1948.

FROM: Chief Aeronautical Engineer

SUBJECT: Cessna Aircraft - Deterioration - Excessive Moisture

Under authority of Information Circular T/5/48 the following notice is issued:-

CESSNA T-50
A-722/Can.2

1. On several occasions, during inspection of the subject type aircraft, the presence of excessive moisture was found in the under fabric surface of the rear wing spar at the point of attachment of the wing to the fuselage and also outboard of the upper surface of the fuselage front wing spar attachment fitting.

2. This condition has a detrimental effect on the spars causing glue failure and opening up of the laminees and therefore, all Cessna T-50 aircraft are to be inspected at these locations immediately and further inspections are to be made at the end of every thirty days or every 100 hours flying time, whichever is the shorter period.

3. Inspections should also be made to ensure that fabric surfaces are in good condition and that all drain grommets are open especially in the region of the fuel tank compartments. Appropriate entries are to be made in the aircraft log book at each inspection.

(H.S. Rees),
Chief Aeronautical Engineer.

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File: 5010-10-109

DEPARTMENT OF TRANSPORT
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INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
January 26, 1949

FROM: Chief Aeronautical Engineer

SUBJECT: Fleet Model 80 - Landing Gear Bolts

1. The following instruction is issued under authority of Information Circular T/5/48:

Fleet Model 80
15/1

2. Certain Fleet Model 80 aircraft have been fitted with a special type of landing gear hinge bolt which incorporates a grease nipple attached to the head, a 3/32 inch diameter hole drilled axially from the head to the mid-length and a similar sized hole extending radially from the end of the axial hole to the periphery of the shank where it emerges in a shallow annular groove.

3. Several cases of failure of these bolts have been reported in which the fracture coincides with the radial hole and annular groove at the mid-length of the shank.

4. Effective immediately, all bolts of this type in service (Parts Nos. 80-0590 and 80-0580) must be replaced by standard AN 6 and AN 4 bolts at the front and rear hinge points respectively.

H. S. Rees,
Chief Aeronautical Engineer

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INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario.
March 19, 1949.

FROM: Chief Aeronautical Engineer

SUBJECT: Grumman Aircraft - Centre Wing Section - Rib Failure

Under authority of Information Circular T/5/48 the following notice is issued:-

GRUMMAN G21A
A-654/Can.1

1. During inspection of one of the subject type aircraft it was found that several of the intermediate ribs in the wing centre section, inside the fuel tank bays, were badly cracked and broken away from the spars. The ribs in question were spot welded to the angles of attachment to the spars.

2. In some aircraft of this type the ribs are riveted to the angles and, therefore, wing centre sections fabricated by this method may not be affected.

3. In view of this condition, all civilian registered Grumman G21A aircraft are to be immediately inspected at the location indicated and appropriate entries made in the aircraft log book.

J.Z. Smith

for (H.S. Rees),
Chief Aeronautical Engineer.

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DEPARTMENT OF TRANSPORT
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CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario.
May 27, 1949.

FROM: Chief Aeronautical Engineer

SUBJECT: Stinson Aircraft - Rudder Control Cables

Under authority of Information Circular T/5/48 the following notice is issued:-

STINSON 108
A-767/Can.1

1. During inspection at overhaul of several Stinson 108 aircraft, excessive wear and fraying of the rudder control cables was evident at the location of the front guide pulleys, which appears to become apparent around the 500-600 hours operating period.

2. In view of this condition, Air Engineers and Owners are advised to pay special attention to the rudder control cables at this location.

(H.S. Rees),
Chief Aeronautical Engineer.

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

PUBLICATIONS CHECK LIST NO. 1.

Ottawa, Ontario.
January 3rd, 1949.

The following Information Circulars to Air Engineers and Aircraft Owners ("T" Series) with Revisions and Appendices were issued by the Air Services Branch from 1st April, 1948 to 31st December, 1948 and are valid at this date:-

| | | | |
|---|---|---|---|
| Inf. Cir. No. | T/5/48 (First Revision) | Date | 30/5/48 |
| " " | T/Special | " | 6/8/48 |
| " " | T/Special | " | 30/10/48 |
| " " | " " | " | 19/11/48 |
| " " | T/Special | " | 3/12/48 |
| " " | T/Special | " | 8/12/48 |
| " " | T/6/48 | " | 25/5/48 |
| " " | T/7/48 | " | 23/6/48 |
| " " | T/8/48 | " | 3/8/48 |
| " " | T/9/48 | " | 3/8/48 |
| " " | T/10/48 | " | 3/8/48 |
| " " | T/11/48 | " | 8/9/48 |
| " " | T/12/48 | " | 7/9/48 |
| " " | T/13/48 | " | 27/10/48 |
| " " | T/13/48 (REVISION) | " | 30/11/48 |
| " " | T/14/48 | " | 22/11/48 |
| " " | T/5/46 (First Revision) | " | 30/11/48 |

Appendix II to Information Circular No. T/22/38 (Fifth Revision) 30/4/48
Amendment List No. 1 to 5th Revision of Appendix II to T/22/38 15/8/48

(W.V.B. Riddell)
Chief, Information & Publications

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
CHICAGO ORCHARD AIRPORT
Park Ridge, Illinois

3-ACB-68
January 24, 1949

TO : All Aviation Safety Agents

FROM : Superintendent, Aircraft Branch

SUBJECT: Airworthiness Certification Procedure for Ski Installation on CAR 03 Aircraft.

In order to obtain uniformity in certification procedure pertaining to Ski installations on aircraft type certificated in the Normal, Utility or Acrobatic Categories, CAR 03, you are authorized and directed to proceed as follows for each condition listed:

A. <u>The Aircraft Specification does not include any ski as an item of approved optional equipment.</u>

Engineering approval, which may include substantiation of landing gear for ski loads (CAR 03.246), including conformity inspection of installation plus engineering flight tests are required prior to issuance of an airworthiness certificate.

Applicants should submit properly executed Repair and Alteration Form ACA 337 for transmittal to 3-295 and engineering processing.

B. <u>The Aircraft Specification does include one or more ski models as items of approved optional equipment but does not include the particular ski model for which approval is desired.</u>

Process in accordance with the following items:

1) Obtain from applicant properly executed Repair and Alteration Form ACA 337.

2) Skis must be type certificated, or

3) Skis must comply with the requirements for type certificated skis (CAR 15.042) (CAR 15.12)(MOP 2-10, Sections .18-.1851) and evidence is required that CAA Engineering approval has been granted.

4) The approved static load per ski must not be less than one half of the maximum approved weight of the aircraft.

5) Installation should be in accordance with CAA approved installation drawings or instructions furnished by the ski or aircraft manufacturer and which are pertinent to the aircraft involved. However, when the applicant does not provide CAA approved installation drawings or instructions, the Agent may grant approval on his own responsibility provided the installation is sufficiently similar to other approved installations and there is no question as to its airworthiness.

6) Check current weight and balance data.

7) A CAA approved skiplane supplement to the Airplane Flight Manual (generally available from the aircraft manufacturer) must be provided by the applicant or amendment shall be made to the CAA Approved Airplane Flight Manual in accordance with pertinent instructions set forth in the Aircraft Specification, or if such instructions are lacking obtain instructions from 3-295.

8) Check flight by competent pilot required plus a notation in the aircraft log book in accordance with CAR 18.52 by the pilot signifying that the ski installation has been flight tested and is satisfactory.

C. <u>The Aircraft Specification includes the particular ski model, for which approval is desired, as an item of approved optional equipment.</u>

Process each installation on a given airplane in accordance with items 1, 5, 6, 7, 8 listed above in Section B.

If the instructions contained herein are not sufficiently clear or do not cover all important situations please furnish your memo comment as early as practicable.

W. A. Klikoff, 3-295

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

AUG. 1 1949

INFORMATION CIRCULAR T/1/49.

OTTAWA, Ontario,
5th July, 1949.

FROM: Director of Air Services

SUBJECT: Requirements for Type Certificates of Airworthiness for Aircraft Radio Equipment

1. GENERAL

1.1 To be eligible for type certification, aircraft radio equipment must be so designed and constructed that it will satisfactorily perform the function or functions for which it is intended to be used in aircraft, under all flight conditions which may be met in regular service.

1.2 Normal operating conditions are as laid down in Section 2 of these requirements, and the tests to be applied to the equipment shall be limited by these conditions save in the case of special equipment for which other conditions may be agreed by the Department.

1.3 Applications for type certification should be made to the Controller of Radio, Department of Transport, Ottawa, and shall be accompanied by one set of drawings, in blue print or equivalent form folded to approximately 9 x 12 inches, containing the manufacturer's designation of the aircraft radio equipment and all details of design, construction, assembly, and materials used, which are necessary for the reproduction of such aircraft radio equipment, provided that adequate photographs may be substituted for such drawings if such photographs are suitably marked to indicate the details required herein.

1.4 The required inspections and tests shall be conducted by the applicant under the supervision of representatives of the Radio Division at a designated time and place. All facilities and test equipment necessary for the conduct of the tests shall be provided by the applicant.

.....2

1.5 The applicant shall submit, in duplicate, a written report of the results of the prescribed inspections and tests.

1.6 Aircraft radio equipment subsequently manufactured in conformity with the drawings and specifications of a type design which has been certified will be deemed airworthy, provided each such item is plainly marked with the Type Certificate number and is accompanied by a release certificate issued in an approved form and signed by an Inspector approved by the Department.

FUNCTIONAL REQUIREMENTS RELATING TO OPERATIONAL CONDITIONS

2.1 Functional requirements relating to atmospheric conditions.

2.11 The equipment shall be capable of satisfactory operation over the ranges and variations with time, of temperature, humidity and pressure that will be met under all normal operational conditions.

2.12 Cycles of temperature, humidity and pressure. Equipment shall suffer no undue damage or permanent deterioration of performance when subject to cycles of temperature, humidity and pressure, the limits of which are specified in paragraphs 2.121, 2.122 and 2.123, arranged in such a way as to implement paragraph 2.11. Under these conditions the equipment shall:-

Firstly - be capable of working continuously; and
Secondly - if switched on under adverse ambient conditions, be capable of working satisfactorily after a reasonable recovery time, without risk of breakdown or fire.

2.121 Temperature. The extremes of temperature between which equipments intended for universal application shall be capable of working satisfactorily are - 35 C. ( - 31 F.) and + 55 C, (+131 F.). In addition, the equipment shall be capable of withstanding ambient temperatures down to - 40 C. ( - 40 F.) and up to + 70 C. (+ 158 F.) when not in operation.

2.122 Humidity. Equipment shall be capable of working satisfactorily in conditions of 95 percent, relative humidity at temperatures up to + 40 C. ( 104 F.)

2.123 Pressure. All equipment shall be capable of satisfactory working at all atmospheric pressures between normal and 30 percent of normal pressure. (Operation up to 30,000 ft.).

.....3

2.124 Operation in a pressurised compartment. Equipment installed in a pressurised compartment may be operated at any altitude provided the maintained pressure in the compartment is, under normal operational conditions, greater than the minimum pressure for which the equipment is approved.

2.2 Functional Requirements relating to Mechanical Conditions.

2.21 Vibration. All anti-vibration mountings, when carrying a load equivalent to that of the equipment intended to be mounted thereon, shall be capable of attenuating by not less than 10 times a sinusoidal vibration applied thereto in any direction at all frequencies between 10 and 100 cycles per second.

2.22 Acceleration. All anti-vibration mountings and fittings attached thereto, when installed in the aircraft and carrying a load equivalent to that of the equipment intended to be mounted thereon, shall be capable of withstanding a steady acceleration equivalent to five times that due to gravity in a vertical direction and three times that due to gravity in any horizontal direction.

2.3 Operational Requirements.

2.31 After setting the controls of transmitting equipment the difference between the intended and the actual frequency of transmission and the output of frequencies other than the intended frequency shall not exceed the tolerances as laid down for aeronautical mobile stations.

2.32 Transmitting equipment in either a radiating or non-radiating condition shall be so designed and shielded that interference with the satisfactory operation of other adjacent aircraft radio equipment is reduced to a minimum, provided that this requirement shall not apply, when in a radiating condition, to interference caused by radiation from the associated aerial system.

2.33 Receiving equipment shall be so designed and shielded that radiation to, and pick-up of unwanted radiation from, other adjacent aircraft radio equipment is reduced to a minimum.

2.34 Transmitters designed to be adjusted at reduced power shall be capable of working at the reduced power indefinitely with any maladjustment of controls (including telegraph key) and/or aerial characteristics and at any input power supply condition for which it is designed.

2.35 Transmitters not capable of being adjusted at reduced power shall be capable of working with any maladjustment of controls (including telegraph key) and/or aerial characteristics and at any input power supply condition for which it is designed, for a period of twice its normal setting-up time without damage, and witnout any protective devices operating.

2.36 Provision shall be made for maintaining reception watch durin

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the intervals between the actual transmissions from the particular communication transmitter associated with the receiver in question.

2.37 When communication transmitter power supplies which are intended to be switched off during prolonged periods of reception are thus disconnected, the time required for changeover from reception to transmission shall not exceed fifteen seconds except as under Paragraph 2.12.

2.38 It shall be possible to start transmitting, under operating conditions, on any pre-selected frequency, not more than 30 seconds after ceasing transmission on any other frequency except as under Paragraph 2.12.

## 3. SAFETY REQUIREMENTS.

### 3.1 Safety

3.11 Equipment shall be so designed that, at all times, including operation, adjustment, or replacement of consumable parts, the risk of a dangerous electric shock or high frequency burn, or the danger resulting from any electric shock or high frequency burn, is reduced to a minimum.

3.12 Equipment shall be so designed that the risk of fire originating therefrom is reduced to a minimum.

3.13 When the equipment is in operation the temperature of exposed parts of the equipment, i.e., after installation, may be exposed to accidental contact with personnel, or with material or apparatus affected by temperatures in excess of 80°C. (176°F.), shall not exceed 80°C. (176°F.)

3.14 All equipment shall be so designed as to have a D.C. conducting path between its aerial terminal and earth.

3.15 Equipment which is classified as vapour proof shall be capable of safe operation in the most explosive conditions likely to be encountered under normal or fault conditions of the aircraft.

### 3.2 Headset and Microphone

3.21 One point in the circuit containing the headset shall be connected to earth under all conditions of operation, either directly or through the low impedance winding of a telephone transformer. The circuit shall be so arranged that no electric shock can occur as a result of an open circuit or insulation failure of the headset.

3.22 One point in the circuit containing the microphone shall be connected to earth under all conditions of operation either directly or through the low impedance primary winding of the microphone transformer.

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## 4. CONSTRUCTIONAL AND MAINTENANCE REQUIREMENTS.

### 4.1 General

4.11 Good workmanship throughout the construction of the equipment is an essential requirement for compliance with these regulations.

4.12 Every unit of equipment shall be clearly marked with details of the following:-

4.121 Serial number or date of manufacture.
4.122 Weight to the nearest pound and fraction thereof.
4.123 Type Certificate number.
4.124 If intended for direct connection to the primary power supply, range of voltage and/or frequency of such supply, over which satisfactory operation is maintained.
4.125 Whether for installation with or without additional anti-vibration mountings.
4.126 That it is "Vapour proof" if it has been so approved.

4.13 All equipment and units thereof shall be so constructed that no damage shall result from normal handling.

4.14 All equipment shall be so constructed that its airworthiness can be readily determined.

### 4.2 Materials

4.21 Materials which are known or proved to be unsatisfactory for use in aircraft radio equipment shall not be used.

4.22 Materials which will char, ignite, or explode from such electrical spark or from such temperature as may be encountered under normal operating conditions shall not be used, and the use of materials which will sustain combustion shall be reduced to a minimum.

4.23 Materials, the surfaces of which are known or proved to be subject to corrosion or the growth of fungus under normal operational conditions shall not be used or shall be protected therefrom.

4.24 To prevent corrosion due to the occurrence of electrolytic action between dissimilar metal surfaces in contact in the presence of moisture, materials shall be so chosen that their electrolytic potential difference does not exceed 0.25 volts, at 20°C. (68°F.).

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4.3 Components

4.31 The components, including valves, shall neither be of a type, nor be used under conditions, known or proved to be unsatisfactory in aircraft radio equipment.

4.32 Where plug and socket connections are used they shall be so arranged that live parts are not exposed to accidental contact.

4.33 Plugs and sockets shall be so designed that they cannot be fitted together incorrectly.

4.4 Controls

4.41 All controls required for operation in flight shall be so designed and located as to permit their satisfactory use, and to guard against their accidental displacement without the knowledge of the operator.

4.42 The functional purpose of all operational controls, switches and levers shall be clearly indicated.

4.5 Internal Wiring and Cabling

4.51 All internal wiring and cabling shall have suitable cross section and insulation and shall be so supported as to prevent damage or unintentional contact with other parts under all normal operating conditions.

4.52 Protection by means of fuses or other protective devices shall be provided, if practicable, for all circuits where necessary to minimize risk of fire under fault conditions.

4.53 All connections shall be effectively locked and shall so remain under normal operating conditions; and all soldered joints shall be made with non-corrosive flux.

4.6 Fixing Methods

4.61 The use of any methods of fixing known or proved to be unsatisfactory for use in aircraft radio equipment is prohibited and all fixings shall be locked in such a manner as to remain effective under operational conditions.

4.7 Mechanical Rigidity

4.71 Equipment intended to be installed on anti-vibration mountings not forming an integral part of that equipment:

The equipment without its anti-vibration mountings, except insofar as these form an integral part of the internal structure of the equipment, shall be so constructed as to be capable of satisfactory

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operation under vibrations and accelerations equivalent to the following tests:-

4.711 Vibration. Vibrations at all frequencies between 10 to 100 cycles per second with a minimum sinusoidal motion of ± .001" at 10 c/s decreasing linearly to ± .0005" at 100 c/s, applied successively in three mutually perpendicular directions.

In addition to verifying satisfactory operation, the test is to be of sufficient duration to permit observation of the behaviour of all component parts throughout the specified frequency range for evidence of resonant vibration. Any visible mechanical resonance, except in parts whose failure would not render the equipment unserviceable, shall either be eliminated by re-design or it shall be demonstrated to the satisfaction of the Approving Authority, that airworthiness is not impaired by such resonance.

4.712 Steady acceleration. Steady acceleration, in any direction, equivalent to five times that due to gravity.

4.72 Equipment intended to be installed without external anti-vibration mountings:

The equipment shall be so constructed as to be capable of satisfactory operation under vibrations and accelerations equivalent to the following tests:-

4.721 Vibration. Vibrations at all frequencies between 10 to 100 cycles per second with a minimum sinusoidal motion of ± .010" at 10 c/s decreasing linearly to ± .005" at 100 c/s applied successively in three mutually perpendicular directions.

In addition to verifying satisfactory operation, the test is to be of sufficient duration to permit observation of the behaviour of all component parts throughout the specified frequency range for evidence of resonant vibration. Any visible mechanical resonance, except in parts whose failure would not render the equipment unserviceable, shall either be eliminated by re-design or it shall be demonstrated to the satisfaction of the Approving Authority, that airworthiness is not impaired by such resonance.

4.722 Steady acceleration. Steady acceleration, in any direction, equivalent to five times that due to gravity.

4.8 Aerial Equipment.

4.81 Controlling aerial winches shall be fitted with devices so designed as to enable the drums to be locked when the aerials are wound in, and for indicating when these conditions obtain. The direction of

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rotation which winds in the aerial shall be clearly indicated under all conditions of operation. Winches shall be fitted with a device to prevent aerials running out at a speed which might cause aerial breakage.

4.82 Trailing aerial weights shall be so designed as to minimize the risk of breakage or detachment under all operational conditions and, in the event of the weights becoming detached to minimize the risk of injury or damage to third parties and their property. The material of which the weights are made and the length of the supporting cable shall be such that deformation of the weights and damage to the supporting cable are minimized. The weight of the complete assembly, excluding aerial wire, is limited to a maximum of 4 lbs.

(A.T. Cowley),
Director of Air Services.

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# INSPECTION RELEASE CERTIFICATE

## AIRCRAFT RADIO EQUIPMENT AND ACCESSORIES

I hereby certify that the equipment and accessories described herein are in good order and that their conformity to approved type is substantiated either by my own inspection and test or by satisfactory documentary evidence from the original source of supply.

| Quantity | Description | Type Certificate Number | Model No. | Serial No. |
|---|---|---|---|---|
| | | | | |

Signed _____ Date _____
Approved Inspector

_____ Co., Ltd.

This Release Certificate must accompany the equipment and be available when the completed aircraft radio station is being inspected.

AUG 1 1949

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR T/2/49.

Ottawa, Ontario,
7th July, 1949.

FROM: Director of Air Services

SUBJECT: Requirements for Aircraft Radio Station Licences

1. GENERAL

1.1 Applications for Aircraft Radio Station licences should be made on an Application for Licence form No. 2133, obtainable from any Department of Transport Radio Inspector, and forwarded to the Controller of Radio, Department of Transport, Ottawa, and shall be accompanied by the licence fee and by complete details of the proposed installation, including two sets of drawings, in blueprint or equivalent form folded to approximately 9 x 12 inches, showing all details necessary for the reproduction of such an installation. Descriptive literature must be included of any items of equipment not manufactured under a Canadian Type Certificate of Approval.

1.11 If the proposed installation is to be an exact duplicate of one which has previously been approved, installation drawings and details need not be resubmitted, but the drawings and specifications of the original installation should be fully identified.

1.2 Permission to proceed with the installation of an Aircraft Radio Station will be given, but the station licence will be granted only after the completed installation has been inspected and tested by a representative of the Department and found to be airworthy. Airworthiness requirements are given in sections two to seven below.

1.3 Before making any modification to an approved station or its equipment, revised drawings and complete details of the proposed modification must be submitted to the Controller of Radio for approval. If the modification is approved, permission to proceed with it will be given and the validity of the station licence will be continued when the station has been inspected and tested by a representative of the Department and found to be airworthy. However,

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minor modifications not affecting the functional performance of the installation or equipment may be authorized directly by Department of Transport Radio Inspectors who will report the modification to the Department.

1.4 It should be noted that the installation of radio equipment in an aircraft constitutes a modification to the aircraft, and approval of such a modification must be obtained, as required in Department of Transport Civil Aviation Division Information Circular No. T/8/38, separately from the Radio Station Licence.

## AIRWORTHINESS REQUIREMENTS FOR AIRCRAFT RADIO STATIONS

### 2. GENERAL REQUIREMENTS

2.1 A radio station is said to be airworthy when it has been demonstrated to fulfil the requirements of correct functioning, safety, reliability, ease of operation and ease of maintenance, as laid down in this document.

2.2 The equipment to be installed shall be of an approved type and shall be accompanied by a Release Certificate signed by an authorized representative of the manufacturer, certifying that the equipment is in good order and conforms to the approved type (Requirements for Type Certification of Aircraft Radio Equipment are contained in Radio Division, Department of Transport Circular No. CR-2). Under existing United States - Canadian agreements the manufacturers invoice identifying the equipment will be accepted in lieu of a Release Certificate in the case of equipment manufactured in the U.S. under C.A.A. approval.

2.3 The method of, and materials used in, the installation of the equipment shall be suitable for use under all normal operational conditions to which the particular aircraft will be subjected.

2.4 Installation technique shall not employ methods or practices which are known or proved to be unsatisfactory, and all attachments to the airframe, including wiring, mountings, antennae, bonding, shielding, etc., shall comply with all pertinent Aircraft Airworthiness requirements.

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## 3. FUNCTIONAL REQUIREMENTS

3.1 The equipment shall be capable of satisfactory operation in the aircraft as follows:-

3.11 In normal cruising flight;
3.12 During landing approach;
3.13 On ground prior to take-off and subsequent to landing;
3.14 During testing on the ground when no external source of power can be provided (limited period of use).

3.2 The installation shall be substantially free from ignition and other electrical interference.

## 4. SAFETY

4.1 The earth terminal (s) of the equipment and all exposed metal parts which are not connected thereto shall be directly connected to the aircraft earth system, with the exception of headsets, microphones, and small fixing details such as screws.

4.2 The operation of protective devices shall not isolate from ground those parts of the circuit which are normally connected thereto.

4.3 Means shall be provided to minimize the effect of ice accretion on the mechanical strength of all aerial systems.

4.4 All reasonable precautions shall be taken to ensure that corrosion on any part of the installation does not endanger the safety of the aircraft.

4.5 Controls used by the crew in the course of their duties shall be out of reach of passengers in the accommodation provided for them and equipment shall not be installed in positions which would impede the reasonable movement of passengers, including their passage from seats to the exits provided.

4.6 The equipment shall be so arranged that its parts are protected from rain, seawater, fuel, oil, excessive heat and other detrimental agencies under normal operational conditions, except parts which are proof against such agencies.

4.7 All cabling between units of the equipment shall be such as to ensure adequate voltage insulation and current carrying capacity under all normal operational conditions.

4.8 Equipment installed in positions where explosive conditions may obtain under normal or fault conditions shall be of an approved vapour-proof type.

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4.9 The strength of the wire or other components of fixed or trailing aerial systems shall be such that in conditions of excessive strain the aerial system shall break before damage is caused to the parts of the airframe to which the aerial is attached and, in the event of such breakage, the risk of interference with the aircraft's controls is to be reduced to a minimum. Subject to these requirements the type and strength of aerial systems shall be such that risk of breakage under normal operating conditions is reduced to a minimum.

4.10 Conductors which may be subject to radio frequency voltages of sufficient magnitude to cause burns or consequent injury to personnel shall be so located or protected that the risk of such danger is negligible.

4.11 Trailing aerial earthing conductors shall be as straight as possible and, when the aerial is extended, shall not enter the airframe except insofar as is necessary for satisfactory connection to the nearest suitable part of the earth system.

4.12 All aerials of more that 6ft. in length shall be at all times provided with means for minimizing the accumulation of static charge and means shall be provided for earthing all aerials of greater length that 30 ft. by the operation of a single control for each or all such aerials. The moving arm of aerial earthing switches must be at earth potential. Aerial earthing conductors shall not pass through any part of the equipment except the associated switching devices. Trailing aerial earthing switches when in operation shall be located outside the airframe and all metal parts of the remote operating control shall be permanently earthed.

## 5. RELIABILITY

5.1 Aerials and other equipment mounted external to the aircraft shall be so installed or protected that the risk of impairment of their performance by ice accretion or by measures for the prevention thereof is reduced to a minimum.

5.2 When aerials are installed under the fuselage or wing they shall be so positioned that breakage or damage due to inadvertent collision by personnel or vehicle is minimized.

5.3 Precautions shall be taken to ensure that corrosion on any part of the radio station does not effect its reliability. To prevent corrosion due to the occurrence of electrolytic action between dissimilar metal surfaces in contact in the presence of moisture, materials shall be so chosen that the electrolytic potential difference does not exceed .25v. at 20°C. (68°F.)

5.4 Equipment, the performance of which depends on the positions of the aerials or other parts in relation to the airframe, shall be calibrated, and the calibration data, where appropriate, shall be conveniently accessible for reference.

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5.5 All wiring and cabling shall be so arranged that mutual interference between units of radio equipment or of radio and electrical equipment due to coupling between wires or cables is effectively suppressed.

5.6 Joints in wires or cable runs shall not be made except by means of terminal blocks, plugs and sockets or other suitable positive connection and shall be so designed and made that they cannot be loosened by vibration.

5.7 Cables shall not be bent at radii such as to cause risk of damage or deterioration.

5.8 When soldered connections are made only non-corrosive flux shall be used.

5.9 Joints in external wires or cables forming the aerial systems shall not be made by any method which might cause deterioration of their electrical or mechanical properties.

5.10 The insulation of aerial lead-in insulators and all parts of the aerial system external to the airframe shall be such as to ensure satisfactory functioning under all normal operational conditions with the equipment for which they are intended.

5.11 Conductors other than co-axial cable forming that part of the aerial system from the lead-in insulator to the transmitting unit shall not be secured to the metal structure of the airframe except by stand-off insulators. This applies to the interior of the fuselage only. Stand-off insulators will not be approved exterior to the fuselage under any circumstances.

5.12 The cables shall be adequately supported, particularly at points adjacent to their terminations, for the avoidance of damage due to vibration. Protection must be afforded where:

5.12.1 there is likely to be relative movement between adjacent parts of the structure to which the cables are attached.

5.12.2 the cables are run in proximity to moving parts.

5.12.3 the cables, by virtue of their small size or construction, are liable to damage from pressure or abrasion.

## 6. EASE OF OPERATION

6.1 The layout of the radio equipment shall be such that it can be operated as intended without undue strain or fatigue being likely to result from inconveniently placed controls.

6.2 All controls, switches and levers must be clearly marked as to their functional use.

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7. EASE OF MAINTENANCE

7.1 The layout and design of the radio equipment shall be such as to facilitate maintenance on the ground and, where applicable, in the air.

7.2 Suitable accommodation shall be provided when necessary for spare parts appropriate to the purposes for which the aircraft and the radio equipment are intended.

7.3 All wiring and cabling of the radio equipment shall have each wire, cable and connector suitably and permanently identified.

(A.T. Cowley),
Director of Air Services.

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FILE: 5008-04-9

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/3/49

Ottawa, Ontario,
1st September, 1949.

FROM: Director of Air Services.

SUBJECT: Airworthiness Certification of Aircraft Overhauled in the United States.

1. Aircraft of Canadian registry overhauled or repaired in the United States requires certification by a C.A.A. agent before consideration can be given to the renewal of their certificates of airworthiness on their return to Canada.

2. Monthly itineraries of C.A.A. agents authorized to conduct aircraft airworthiness inspections may be obtained from the following regional offices:

(a) First Regional Office - Federal Building
New York International Airport
Jamaica, Long Island, New York

(b) Third Regional Office - Chicago Orchard Airport
Park Ridge, Illinois

(c) Seventh Regional Office - P.O. Box 3224
Exchange Building.
Seattle 14, Washington.

A. T. Cowley

(A. T. Cowley),
Director of Air Services.

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File No. 5010-10-21

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
September 6, 1949.

FROM: Chief Aeronautical Engineer

SUBJECT: Noorduyn Norseman Mk VI (UC-64AS) - Permissible Gross Weight

Under authority of Information Circular T/5/48 the following notice is issued.

Noorduyn UC-64AS
A-2-578/Can. 1.

Norseman 7/2

1. The Noorduyn UC-64AS (Norseman Mk VI) Seaplane will be eligible for certification in Canada for civil use at a gross weight of 7540 pounds when MacDonald Edo 55-7170A floats are installed as stated in the U.S., C.A.A., Aircraft Specification No. A-2-578, dated, July 15, 1949, with the exception that item (e) under "Maximum Weight" (baggage compartment modification) is not necessary unless a large baggage compartment is desired.

H. S. Rees,
Chief Aeronautical Engineer.

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/4/49.

Ottawa, Ontario.
12th September, 1949.

FROM: Director of Air Services

SUBJECT: Certification of Fuels and Lubricants

1. The present system of Inspection Release Certificates being issued by major fuel and oil companies to certify their products which are destined for use in Civil Aircraft is hereby cancelled, together with the listings of Approved Inspectors for such companies, which appear in the Classified List of Enterprises.

2. Effective immediately, each fuel and oil company will be held responsible for the quality and correctness to specification of its products which are delivered for use in civil aircraft, up to the point of actual delivery.

3. From the point of delivery, the operator will be held responsible for the correct storage, handling and usage of fuels and lubricants.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.

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CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/5/49

Ottawa, Ontario.
Original Issue 12th Sept. 1949.

FROM: Director of Air Services

SUBJECT: Civil Aero-engines - Used Parts

1. Parts taken from a dismantled civil aero-engine at a recognized overhaul shop may be used, at that overhaul shop only, in the re-building of an engine of the same type and series, provided that:

(a) The parts are subjected to close inspection.

(b) The parts are within the makers tolerances.

(c) A record is kept at the overhaul shop of the engineering history of the parts showing the engine type, series and aerial number of the engine from which the parts were taken, the total hours of the parts at the time of installation in the re-built engine.

(d) An entry is made in the log book of the re-built engine listing the parts so used and containing the record required by "c" above.

2. The above records and log-book entries are additional to those normally required at engine overhaul.

3. The requirements of Information Circular T/5/47, Paragraph 9 (b) concerning used engine parts acquired from military sources remain in effect.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.

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FILE: 5012-G3

NOV 21 1949

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/6/49

Ottawa, Ontario,
October 18th, 1949.

FROM: Director of Air Services

SUBJECT: Aviation Fuels

1. The use of 100 octane aviation gasoline which meets Canadian Government Specification 3-GP-25 is permitted in those Wright and Pratt and Whitney engines which require and normally operate on 91 octane aviation gasoline, which meets Canadian Government Specification 3-GP-5, when fuel to the latter specification is not available.

2. Apart from octane ratings and colour (100 is green, while 91 is blue), the specification requirements, such as distillation range, vapour pressure, gum content, maximum lead content, etc., are the same.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.

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File: 5206-6

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR T/7/49.

Ottawa, Ontario,
November 12, 1949.

FROM: Director of Air Services.

SUBJECT: Aircraft Identity - Reports and Procedure.

1. The Air Regulations require that, in the case of an aircraft registered in Canada being damaged to such an extent that repairs other than ordinary running repairs or replacements are necessary, the owner or pilot thereof shall notify the Minister forthwith, giving particulars of such damage.

2. In accordance with the above regulation, a record of all such damage is to be kept in the aircraft log book and the entry signed by the competent engineer.

3. The Air Regulations also require that when a registered aircraft has been destroyed or permanently withdrawn from use, the registered owner shall forthwith notify the Minister accordingly, and the registration and certificate thereof shall lapse as from the date of such notification.

4. When damaged to such an extent that the fuselage is declared, by the owner, to be beyond repair, the aircraft loses its identity, and the C. of R. and C. of A. shall be returned to the Minister for cancellation. with the report of damage as required by para. 1 above. Failure to make such a declaration will result in the certificates being automatically cancelled after a period of twelve months from the date of damage.

5. Complete units only, such as wings, tail surfaces, undercarriages, etc., removed from an aircraft whose registration has been cancelled, but which are considered "Repairable", may be installed in another aircraft, provided that they have been completely overhauled and re-certified as airworthy by a competent engineer, and provided that a complete history of the unit is entered in the log book of the aircraft to which it is subsequently fitted.

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6. The above procedure is brought into effect to obtain a more precise record of aircraft in service in Canada, and, furthermore, to amplify existing log book records of aircraft component replacements.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.

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File No. 5010-9-2

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR T/8/49.

Ottawa, Ontario,
25th November, 1949.

FROM: Director of Air Services.

SUBJECT: Policy Re Aero-engines Rebuilt in U.S.A.

1. The U.S. Civil Aeronautics Authority defines a rebuilt engine as follows:

> "A rebuilt engine is defined as a used engine which has been completely disassembled, inspected, repaired as necessary, reassembled, tested, and approved in the same manner and to the same tolerances and limits as a new engine. Component parts of such engines may be either used parts or new parts. The used parts may be either the parts from the same engine or from other service engines, but they must conform to production drawing tolerances and limits to which new parts must conform. In addition, all parts, either new or used, meeting approved oversize and undersize dimensions acceptable for new engines are also eligible."

2. When a rebuilt engine is received in Canada, accompanied by a New Engine Warranty, a Certificate of Airworthiness for Export and a new engine log book, it may be installed in a Canadian registered aircraft as a new engine, and may be so used during the normal operating periods for the type

3. If an engine, received in Canada under the conditions of para. 2 above, is re-submitted to the manufacturer for overhaul and is subsequently released bearing the same serial number, then it must be considered an overhauled engine, and the requirements of Information Circular T/5/49 will apply.

A. T. Cowley

(A. T. Cowley),
Director of Air Services.

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
December 17, 1949.

FROM: Chief Aeronautical Engineer.

SUBJECT: DC-3 Aircraft - Attach Angles.

Under authority of Information Circular T/5/48 the following notice is issued:-

Douglas DC-3
TC 618
TC 669/Can.1

1. With reference to Airworthiness Directive No. 39-24-1 experience has shown that in Canada, deterioration of the light type wing doublers has not been found up to 10,000 hours doubler flying time.

2. Therefore, the inspection period of 8,000 hours doubler flight time may be increased to 10,000 hours at the owners discretion.

3. Regardless of doubler time, or the condition of doublers and attach angles, all angles and doublers of the light type are to be replaced by the heavier type at next overhaul, or at 16,000 hours total doubler time, whichever occurs first.

H.S. Rees

(H.S. Rees),
Chief Aeronautical Engineer.

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DEPARTMENT OF TRANSPORT
AIR SERVICE BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

Ottawa, Ontario,
Original: January 13, 1950.

FROM: Chief Aeronautical Engineer

SUBJECT: Canadair C-4 and C-4-1 - Mandatory Modifications, Inspections and Replacements.

The following instruction is issued under the authority of Information Circular T/5/48:-

C-4
C-4-1
21/1

Modifications, inspections and replacements pertaining to Canadair C-4 and C-4-1 aircraft as described in the Service Bulletins and Service Letters listed below, including all current amendments thereto, are mandatory. Acceptable alternative procedures are covered by notes at the end of this Circular.

Where modifications are required, they must be accomplished at the earliest opportunity and in any event not later than the dates or periods specified in this Circular.

Where periodic inspections are required, they must begin not later than the next appropriate inspection period.

| Service Bulletin or Letter | Compliance Required | Notes |
|---|---|---|
| Canadair Service Letter No. C4-1 | | Note 1 |
| Canadair Service Letter No. C4-2 | | |
| Canadair Service Letter No. C4-3 | | |
| Canadair Service Letter No. C4-4 | | |
| Canadair Service Letter No. C4-10 | | |
| Canadair Service Letter No. C4-38 | February 15, 1950 | |

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| Service Bulletin or Letter | Compliance Required | Notes |
|---|---|---|
| Canadair Service Letter No. C4-59 | February 15, 1950 | |
| Canadair Service Letter No. C4-83 | February 15, 1950 | |
| Canadair Service Letter No. C4-85 | February 15, 1950 | |
| Canadair Service Letter No. C4-106 | February 15, 1950 | |
| Canadair Service Letter No. C4-112 | | |
| Canadair Service Letter No. G-4 | February 15, 1950 | |
| Canadair Service Letter No. G-14 | | |

NOTE 1: S.L. C4-1. These service periods may be extended as follows: Part 1, 200 hours; Part 2, 400 hours.

NOTE 2: S.L. C4-112. This inspection period may be extended to 3000 hours.

(H.S. Rees),
Chief Aeronautical Engineer.

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
January 27, 1950.

FROM: Chief Aeronautical Engineer

SUBJECT: Cessna Aircraft 120 and 140
Upper Rudder Hinge

Under authority of Information Circular T/5/48 the following notice is issued:-

1. During inspection of aircraft of the subject type, it has been noted that in several instances the top rudder hinge was loose. This hinge is attached to the fin spar by means of four rivets, two of which are of the "Cherry" type.

2. It has been ascertained that this type of attachment is common to all Cessna 120 and 140 types.

3. Air Engineers and Owners are advised to inspect these rudder hinges immediately and to replace loose rivets.

H. S. Rees,
Chief Aeronautical Engineer.

5010-10-41
5012-B3

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/1/50.

Ottawa, Ontario,
January 28, 1950.

FROM: Director of Air Services

SUBJECT: Aircraft Fabric

1. Doped fabric which has been in service for some time, and the airworthiness standard of which is in doubt, may be tested, after having the dope removed by means of a dope thinner or acetone. The following minimum strengths will be accepted as meeting Canadian Standards of Airworthiness:-

(a) Grade "A" Fabric - Minimum Breaking Strength - 56 lbs. per in.

(b) Intermediate Grade - Minimum Breaking Strength - 46 lbs. per in.

(c) Airplane Cloth for Gliders - Minimum Breaking Strength - 39 lbs. per in.

(d) Aircraft Linen DTD540 - Minimum Breaking Strength - 63 lbs. per in.

2. Testing may be carried out in accordance with the procedure set forth in U.S. Federal Specification CCC-T-191A, American Society for Testing Materials Specification D39-99, or other standard testing specification.

3. It is the responsibility of the aircraft owner to prove the strength of the fabric.

A.T. Cowley

(A.T. Cowley),
Director of Air Services.

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DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
Original: February 3, 1950
1st Revision: February 14, 1950

FROM: Chief Aeronautical Engineer

SUBJECT: DeHavilland "Beaver" DHC-2
Mandatory Modifications, Inspections and Replacements

The following instruction is issued under authority of Information Circular T/5/48:-

1. Modifications, inspections and replacements pertaining to deHavilland DHC-2 aircraft, as described in the deHavilland Aircraft of Canada Technical News Sheets and Design Leaflets listed below, including all amendments thereto, are mandatory.

2. Where modifications are required, they must be accomplished at the earliest opportunity and in any event not later than the dates or periods specified in this circular.

3. Where periodic inspections are required, they must begin not later than the next appropriate inspection period.

| Technical News Sheet | Serial Nos. Affected | Compliance Required |
|---|---|---|
| B.1 | 1 through 9 | Immediate |
| B.3 | 1 through 14 | Immediate |
| B.5 | 1 through 17 | Immediate |
| B.14 | 1 through 39 | April 1, 1950 |
| B.20 | 1 through 61 and 63 | April 1, 1950 |
| B.22 | 1 through 66 | April 1, 1950 |
| B.25 | 1 through 66, except 10,14,51,62,65 | March 15, 1950 |

5010-10-155

(H. S. Rees),
Chief Aeronautical Engineer.

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DEPARTMENT OF TRANSPORT
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CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO.T/SPECIAL INSTRUCTION

Ottawa, Ontario,
Original: October 14, 1949
1st Revision: March 4, 1950

FROM: Chief Aeronautical Engineer

SUBJECT: deHavilland DHC-1 (Chipmunk) Series - Mandatory Modifications, Inspections and Replacements

The following instruction is issued under authority of Information Circular T/5/48:

1. Modifications, inspections and replacements pertaining to deHavilland DHC-1 series aircraft, as described in the deHavilland Aircraft of Canada Technical News Sheets and Design Leaflets listed below, including all current amendments thereto, are mandatory.

2. Where modifications are required, they must be accomplished at the earliest opportunity and in any event not later than the dates or periods specified in this Circular.

3. Where periodic inspections are required, they must begin not later than the next appropriate inspection period.

| Technical News Sheet | Design Leaflet | Serial Nos. Affected | Compliance Required |
|---|---|---|---|
| C 3 | Mod. 456 | 3 through 30 | April 1, 1950 |
| C 4 | --- | all aircraft | |
| C 6 | --- | 1 through 36 | April 1, 1950 |
| C 7 | Mod.1/552 | 1 through 61 | Jan. 1, 1950 |
| | Information Leaflet CM 1003 | 3, 4, and 5 | Immediate |

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| Technical News Sheet | Design Leaflet | Serial Nos. Affected | Compliance Required |
|---|---|---|---|
| -- | Mod. 278 | 1,3,4,5,6, and 8 | Immediate |
| -- | Mod. 322 | 1,3,4,5,6, and 7 | Immediate |
| -- | Mod. 1/535 | all aircraft | April 1, 1950 |

H. S. Rees,
Chief Aeronautical Engineer.

5010-10-136

5010-10-98

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

Anson V
/Can. 1

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario
6th March, 1950.

FROM: Chief Aeronautical Engineer

SUBJECT: Anson V Aircraft - Reinforcement of Fin Post (for Ski Operation)

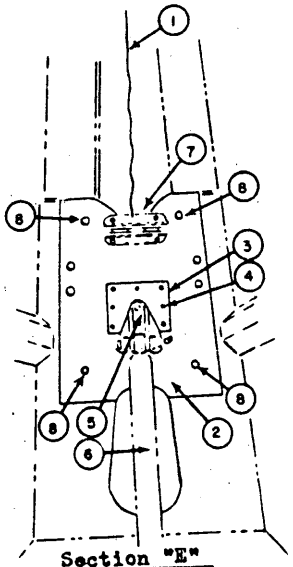
The following instruction is issued under authority of Information Circular T/5/48:-

1. Inspection of the subject type aircraft revealed that the shock strut attachment bracket 2/K1394-26DD8507 became loose in its attachment to the fin spar. The three attachment bolts were bent, and the bushings in the packing block of the fin became loose. Cracks were also seen in the plywood facing of the fin post.

2. Satisfactory repairs and reinforcements were made to the fin of Anson V, CF-FVZ, by the Saskatchewan Government Airways, reference S.G.A. Engineering Bulletins 35-1 and 35-2.

3. Periodical inspection every 200 hours is required, and similar or equivalent reinforcement must be incorporated in all Anson V aircraft operating on skis where inspection reveals damage to the fin at the shock strut attachment fitting.

S.G.A. ENGINEERING BULLETIN NO. 35-1



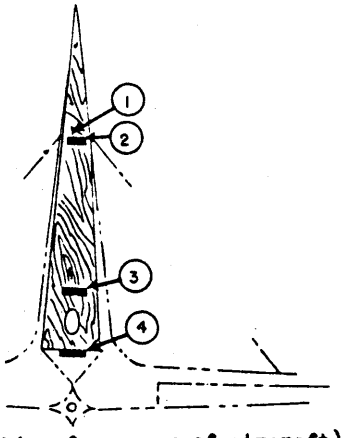
Section "E"
(Looking Aft)

Reinforcement of fin post at shock strut attachment for ski operations.

① Crack evident in plywood facing.
② Reinforcement plate - S.A.E. X4130 x 12 ga.
③ Butt Plate - S.A.E. X4130 x 11 ga.
④ Rivets (6 off) - Steel X3/16 x ¼
⑤ Shock Strut Bracket (original) ref. only
⑥ Shock Strut " " "
⑦ Pulley Bracket Angle " " "
⑧ Bolts (4 off) AN3-24 ) additional.
Nuts (4 off) AC365-1032)

NOTES
(a) Bolts - all original bolts replaced with ¼ inch longer bolts.
(b) Finish - Zinc chromate

S.G.A. ENGINEERING BULLETIN NO. 35-2



(Looking from rear of aircraft).

Reinforcement of fin post.

① Reinforcement 1/8 inch aircraft Birch plywood (full length of fin post.
② Upper Hinge Bracket.
③ Middle Rudder Hinge Bracket.
④ Bottom Rudder Hinge Bracket - shimmed out 1/8 inch using X4130 steel shim to compensate for thickness of plywood reinforcement under upper two hinge brackets.

NOTE:
Plywood reinforcement glued and bradded to fin post.

FINISH
Shellac, lionoil, fabric cover and paint.

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H. S. Rees,
Chief Aeronautical Engineer.

DEPARTMENT OF TRANSPORT
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CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO.T/SPECIAL INSTRUCTION

Ottawa, Ontario
Original December 3, 1948
1st Revision March 12, 1949
2nd Revision February 10, 1950

FROM: Chief Aeronautical Engineer

SUBJECT: Canadair DC4M2 - Mandatory Modifications, Inspections and Replacements

The following instruction is issued under the authority of Information Circular T/5/48:

1. Modifications, inspections and replacements pertaining to Canadair DC4M2 aircraft as described in the Service Bulletins and Service Letters listed below, including all current amendments thereto, are mandatory. Acceptable alternative procedures are covered by notes at the end of this Circular.

2. Where modifications are required, they must be accomplished at the earliest opportunity and in any event not later than the dates or periods specified in this Circular.

3. Where periodic inspections are required, they must begin not later than the next appropriate inspection period.

| Service Bulletin or Letter | Compliance Required | Notes |
|---|---|---|
| Canadair Service Bulletin No. DC4M #13 | February 1, 1949 | |
| Canadair Service Letter No. 24 | February 1, 1949 | |
| Canadair Service Letter No. 120 | February 1, 1949 | Note 1 |
| Canadair Service Bulletin No. DC4M #20 | February 1, 1949 | |
| Canadair Service Bulletin No. DC4M #21 | At next 3000 hour inspection | |
| Canadair Service Letter No. 137 | | Note 2 |
| Canadair Service Letter No. 135 | | Note 3 |
| Canadair Service Letter No. 144 | | |
| Canadair Service Letter No. 143 | | Note 4 |

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| Service Bulletin or Letter | Compliance Required | Notes |
|---|---|---|
| Canadair Service Letter No. 149 | | |
| Canadair Service Letter No. 151 | | Note 5 |
| Canadair Service Bulletin No. DC4M #27 | April 1, 1949 | |
| Canadair Service Bulletin No. DC4M #16 | February 1, 1949 | |
| Canadair Service Bulletin No. DC4M #17 | February 1, 1949 | |
| Canadair Service Bulletin No. DC4M #18 | February 1, 1949 | |
| Canadair Service Bulletin No. DC4M #25 | May 1, 1949 | |
| Canadair Service Bulletin No. DC4M #26 | June 1, 1949 | Note 6 |
| Canadair Service Bulletin No. DC4M #29 | June 1, 1949 | |
| Canadair Service Bulletin No. DC4M #6 | At next 3000 hour inspection | |
| Canadair Service Bulletin No. DC4M #22 | February 1, 1949 | |
| Canadair Service Letter No. 153 | | |
| Canadair Service Letter No. 19 | February 1, 1949 | |
| Canadair Service Letter No. 98 | February 1, 1949 | |
| Canadair Service Letter No. 158 | March 1, 1949 | |
| Canadair Service Letter No. 168 | February 1, 1949 | |
| Canadair Service Letter No. 140 | February 1, 1949 | |
| Canadair Service Letter No. 25 | February 15, 1950 | |
| Canadair Service Letter No. 46 | February 15, 1950 | |
| Canadair Service Letter No. 133 | April 15, 1950 | |
| Canadair Service Letter No. 155 | February 15, 1950 | |
| Canadair Service Letter No. 156 | February 15, 1950 | |
| Canadair Service Letter No. 157 | February 15, 1950 | |

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| Service Bulletin or Letter | Compliance Required | Notes |
|---|---|---|
| Canadair Service Letter No. 169 | March 15, 1950 | |
| Canadair Service Letter No. 182 | February 15, 1950 | |
| Canadair Service Letter No. 184 | April 15, 1950 | |
| Canadair Service Letter No. 192 | | |
| Canadair Service Letter No. G-4 | February 15, 1950 | |
| Canadair Service Letter No. G-14 | | |

NOTE 1: As an alternative to Service Letter No. 120, the anti-retract mechanism may be permanently disconnected.

NOTE 2: S.L. 137 - This inspection period may be extended to 3000 hours.

NOTE 3: S.L. 135 - This inspection period may be extended to 400 hours

NOTE 4: S.L. 143 - These service periods may be extended as follows: Part 1, 250 hours; Part 2, The lubrication period for drive shafts equipped with lubrication fittings may be extended to 250 hours.

NOTE 5: S.L. 151 - This rework may be accomplished at operator's convenience but must not be delayed beyond 8000 hours service time.

NOTE 6: S.B. No. DC4M #26 - The part dealing with the installation of visual inspection plugs is not mandatory.

H. S. Rees,
Chief Aeronautical Engineer.

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Anson V
/Can.2

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
April 15, 1950.

FROM: Chief Aeronautical Engineer

SUBJECT: Anson V Aircraft - Failure of Glue Joint, Skin to Vertical Fin Post

The following instruction is issued under authority of Information Circular T/5/48:-

1. It has been reported that the glue joint between the skin and the vertical fin post of the subject type aircraft has been found deteriorated to the point of failure.

2. It is not possible to determine the condition of this joint by external visual inspection, but only by inspection from the inside of the fuselage with a slight pressure being applied to the skin with the hands.

3. In view of this, all Anson V Aircraft must be inspected within the next ten flying hours, and at each 50 hour period thereafter, with appropriate entries being made in the aircraft log book.

4. Where defective joints are found, suitable repairs are to be made immediately, and the aircraft must not be flown until such repairs are satisfactorily completed and certified by a properly licensed air engineer.

H. S. Rees,
Chief Aeronautical Engineer.

5010-10-98

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/2/50.

OTTAWA, Ontario.
20th April, 1950.

FROM: Director of Air Services

SUBJECT: Renewals of Certificates of Airworthiness.

1. In order to simplify the existing methods of renewing Certificates of Airworthiness and to ensure uniform standards of procedure in this respect, it has been decided, that, effective April 30, 1950, for any civil aircraft in Canada due for renewal of its C. of A. after June 30, 1950, the procedures outlined in Paras. 2 and 3 below must be adopted.

2. (a) Renewals of currently valid Certificates

(i) Application for renewal must be made on Form No. 2444 (Application for Renewal of C. of A.), in triplicate. If continuity of operation is desired, the application must be made 30 days prior to the date certificates expire.

(ii) The applicant must fill out and sign the first part of the application.

(iii) A properly qualified air engineer must fill out and sign the second part of the application, and also certify work in the appropriate log books.

(iv) Pilot's certification in Form No. 2444 to be completed and also entered in aircraft log book.

(v) Two copies of Form No. 2444 together with the Certificate of Airworthiness and Certificate of Registration will be submitted to the District Aircraft Inspector. One copy will be retained and is the authority to operate the aircraft for either the period of validity of the certificates, or a period of 30 days, whichever is the sooner.

(vi) Temporary authority to operate the aircraft should no longer be necessary and will not normally be given. Log books need not be surrendered, but a copy of the weight and balance sheet should be submitted.

(b) Renewals of Lapsed Certificates

When a C. of A. has lapsed for a period in excess of 90 days, inspections by a licensed air engineer and the District Aircraft Inspector must be made prior to either the renewal of the Certificates of Registration and Airworthiness, or issue of an interim certificate. Then the procedure as outlined in Para. 2 (a) above must be followed.

3. Copies of the Form No. 2444 may be obtained on application to the office of the local District Superintendent, Air Regulations.

A.T. Cowley

(A.T. Cowley),
Director of Air Services.

Douglas DC-3
TC 618/Can.2
TC 669

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR T/SPECIAL INSTRUCTION

OTTAWA, Ontario,
June 22nd, 1950.

FROM: Chief Aeronautical Engineer

SUBJECT: DC-3 Aircraft - Fuel Selector

Under authority of Information Circular T/5/48 the following notice is issued:-

1. It has been reported that excessive backlash found on the fuel cock selector, on the subject type aircraft, was found to be due to a sheared rivet at the ball joint of the universal at the selector drum.

2. All DC-3 aircraft are to be inspected immediately for sheared rivets at the Selector Drum and Universal AN 270, Douglas Part No. 2119150-2. Corrective action is to be taken where defective units are found.

3. The above action is necessary to avoid failure of the fuel selector, and possible subsequent engine failure.

(H.S. Rees),
Chief Aeronautical Engineer.

5008-E19-15

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/SPECIAL INSTRUCTION

Ottawa, Ontario.
August 25, 1950.

FROM: Chief Aeronautical Engineer

SUBJECT: Installation of Auxiliary Seaplane Fin on Norseman Mk. IV, V, & VI Seaplanes.

Under authority of Information Circular T/5/48 the following notice is issued:-

1. According to the United States Civil Aeronautics Administration Aircraft Specification 2-578 an Auxiliary Fin (manufacture Part No. 16-35136) must be installed to provide satisfactory directional stability. (Reference also C.C. & F. Co., Ltd. Report No. 16-0005 Para. 16-0005.320)

2. Since the Norseman Mk. IV, V, and VI Seaplanes have been operated satisfactorily in Canada for many years without this Auxiliary Fin, its installation will not be required for domestic operations within Canada. Seaplanes exported from Canada must incorporate the special Fin.

(H.S. Rees)
Chief Aeronautical Engineer.

5010-10-103
5010-10-114
5010-10-21

DEPARTMENT OF TRANSPORT
AIR SERVICES BRANCH
CIVIL AVIATION DIVISION

INFORMATION CIRCULAR NO. T/2/50.

OTTAWA, Ontario,
Original 20th April, 1950,
1st Revision 15th September, 1950.

FROM: Director of Air Services

SUBJECT: Renewals of Certificates of Airworthiness.

1. In order to simplify the existing methods of renewing Certificates of Airworthiness and to ensure uniform standards of procedure in this respect, it has been decided, that, effective April 30, 1950, for any civil aircraft in Canada due for renewal of its C. of A. after June 30, 1950, the procedures outlined in Paras. 2 and 3 below must be adopted.

2. (a) Renewals of Currently Valid Certificates at Normal Expiration Periods.

(i) Application for renewal must be made on Form No. 2444 (Application for Renewal of C. of A.), in triplicate. If continuity of operation is desired, the application must be made 30 days prior to the date certificates expire.

(ii) The applicant must fill out and sign the first part of the application.

(iii) A properly qualified air engineer must fill out and sign the second part of the application, and also certify work in the appropriate log books.

(iv) Pilot's certification in Form No. 2444 to be completed and also entered in aircraft log book.

(v) Two copies of Form No. 2444 together with the Certificate of Airworthiness and Certificate of Registration will be submitted to the District Aircraft Inspector. One copy will be retained and is the authority to operate the aircraft for either the period of validity of the certificates, or a period of 30 days, whichever is the sooner.

(vi) Temporary authority to operate the aircraft should no longer be necessary and will not normally be given. Log books need not be surrendered, but a copy of the weight and balance sheet should be submitted.

(b) Renewal of Certificates During Normal Period of Validity.

Should an owner wish to submit his certificates for renewal at any period before normal expiration, Form 2444 is to be used as noted in 2(a) and the renewal date will then be that of the Test Flight certification on Form 2444, and the certificates will be renewed for a period of 12 months from that date.

(c) Renewals of Lapsed Certificates

When a C. of A. has lapsed for a period in excess of 90 days, inspections by a licensed air engineer and the District Aircraft Inspector must be made prior to either the renewal of the Certificates of Registration and Airworthiness, or issue of an interim certificate. Then the procedure as outlined in Para. 2(a) above must be followed.

3. Copies of the Form No. 2444 may be obtained on application to the office of the local District Superintendent, Air Regulations.

A. T. Cowley

(A.T. Cowley),
Director of Air Services.